

Application No. 09/648,767
Reply to Office Action mailed October 19, 2004

Patent
Attorney Docket No. 86114-38
(formerly 85773-323)

II. REMARKS/ARGUMENTS

The Applicant gratefully acknowledges the allowance of claims 44-48.

A. Summary of the Amendments

The present application still contains 54 claims.

Claims 1-21, 45-48 and 50-53 have been amended.

It is respectfully submitted that no new matter has been added to the application under the present response.

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B. Summary of Rejections and Reply

1) Rejection of claims 1-31 and 39-43 under 35 USC 101

On page 3 of the Office Action, the Examiner has rejected claims 1-31 and 39-43 under 35 USC 101 as being directed to non-statutory subject matter.

For the reasons set forth below, and in light of the amendments made to claims 1-21, it is respectfully submitted that claims 1-21 and 39-43 are directed to statutory patentable subject matter. Accordingly, the Examiner is respectfully requested to withdraw his rejection of claims 1-31 and 39-43 under 35 USC 101.

Claims 1-21

The Examiner's attention is directed to the following excerpts of independent claims 1, 10, 20 and 21, portions of which have been highlighted:

- "1. A **transmission medium** conveying a communications signal comprising..."
- "10. A **transmission medium** conveying a communications signal comprising..."
- "20. A **transmission medium** conveying a communications signal comprising..."
- "21. A **transmission medium** conveying a communications signal comprising..."

Independent claims 1, 10, 20 and 21 have been amended to claim "[a] transmission medium conveying a communications signal", rather than a communications signal embodied in a transmission medium.

It is respectfully submitted that a "transmission medium" is clearly a "composition of matter" and is therefore statutory patentable subject matter.

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Accordingly, the Examiner is respectfully requested to withdraw his rejection of independent claims 1, 10, 20 and 21 under 35 USC 101. Furthermore, since dependent claims 2-9 and 11-19 respectively depend either directly or indirectly on claims 1 and 10 (and have also been amended to claim a "transmission medium"), the Examiner is also respectfully requested to withdraw his rejection of dependent claims 2-9 and 11-19 under 35 USC 101. It is respectfully submitted that claims 1-21 are in condition for allowance.

Incidentally, the Examiner has not rejected claims 1-21 as being unpatentable in light of certain references, as he has done in the previous Office Action mailed April 9, 2004. Should the Examiner consider setting forth such a rejection in a subsequent Office Action, the Applicant respectfully refers the Examiner to the arguments set forth on pages 3-11 of the "Response to Office Action" dated July 8, 2004, regarding patentability of the claims over these references.

Claims 22-31 and 39-43

The Examiner's attention is directed to the following excerpts of independent claims 22 and 39, portions of which have been highlighted:

- "22. A method of extracting an overhead bit stream from a composite optical signal..."
- "39. A method of generating a composite communications signal from a payload bit stream and an overhead bit stream..."

Independent claims 22 and 39 are respectively directed to:

- (1) a method of extracting an overhead bit stream from a composite optical signal;
and
(2) a method of generating a composite communications signal from a payload bit stream and an overhead bit stream.

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It is plain to see that each one of independent claims 22 and 39 is directed to a "method", i.e. a "process", which is clearly statutory patentable subject matter.

With respect, the Applicant fails to see how the Examiner's assertion, made on page 3 of the Office Action, that "[a] signal per se is non-statutory matter" and does not fit "within the category of a "composition of matter"" applies to independent claims 22 and 39, which, again, are both directed to a method, not a signal. If the Examiner maintains his rejection of independent claims 22 and 39 under 35 USC 101, he is respectfully requested to specifically address why he believes that independent claims 22 and 39 are directed to non-statutory patentable subject matter.

In view of the foregoing, the Examiner is respectfully requested to withdraw his rejection of independent claims 22 and 39 under 35 USC 101. Furthermore, since dependent claims 23-31 and 40-43 respectively depend either directly or indirectly on claims 22 and 39, the Examiner is also respectfully requested to withdraw his rejection of dependent claims 23-31 and 40-43 under 35 USC 101. It is respectfully submitted that claims 22-31 and 39-43 are in condition for allowance.

Incidentally, the Examiner has not rejected claims 22-31 and 39-43 as being unpatentable in light of certain references, as he has done in the previous Office Action mailed April 9, 2004. Should the Examiner consider setting forth such a rejection in a subsequent Office Action, the Applicant respectfully refers the Examiner to the arguments set forth on pages 11-13 and 15-17 of the "Response to Office Action" dated July 8, 2004, regarding patentability of the claims over these references.

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2) Rejection of claims 49-52 and 54 under 35 USC 103

On page 4 of the Office Action, the Examiner has rejected claims 49-52 and 54 under 35 USC 103(a) as being unpatentable over Petsko et al. U.S. Patent No. 6,292,516 (hereinafter referred to as "Petsko") in view of Tsuda U.S. Patent No. 5,619,507 (hereinafter referred to as "Tsuda").

As set forth herein below, the Applicant respectfully traverses the rejection and submits that claims 49-52 and 54 are in condition for allowance.

Independent claim 49

The Examiner's attention is directed to the following excerpt of claim 49, portions of which have been highlighted:

49. A system [...] comprising:

[...]

means for transforming the overhead bit stream into a series of bursts which fit into respective ones of the gaps of the gapped bit stream;

wherein the second transforming step includes mapping each overhead bit into a wrapper symbol which is represented by either a first signal level transition pattern or a second signal level transition pattern depending on the logical value of the overhead bit; and

wherein the first and second signal level transition patterns each have a distinct average signal level and are each characterized by at least one signal level transition.

It is respectfully submitted that Petsko and Tsuda, whether taken separately or in combination, do not teach or suggest the above features of claim 49.

To begin with, it is respectfully submitted that the Examiner, in his rejection of claim 49 on page 4 of the Office Action, has not addressed *any* of the features of the system claimed in claim 49.

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In particular, the Examiner has not indicated why and how he believes that Petsko, Tsuda, or their combination, teaches or suggests the claimed feature of "means for transforming the overhead bit stream into a series of bursts which fit into respective ones of the gaps of the gapped bit stream[, the transforming including] mapping each overhead bit into a wrapper symbol", where each wrapper symbol "is represented by a first signal level transition pattern or a second signal level transition pattern depending on the logical value of the overhead bit".

If for any reason the Examiner continues to maintain an argument of unpatentability, then he is kindly and respectfully urged to identify which features of Petsko, Tsuda, or their combination, he considers as corresponding to the claimed means that enable "mapping [of] each overhead bit into a wrapper symbol" based on "the logical value of the overhead bit". The Examiner is also respectfully requested to note that an argument which fails to identify the claimed means that enable "mapping [of] each overhead bit into a wrapper symbol" based on "the logical value of the overhead bit", cannot support a finding of obviousness, as the third criterion required for establishing a *prima facie* case of obviousness in accordance with MPEP 706.02(j) will not be satisfied¹.

Moreover, the fact that the Examiner has not addressed any of the features of the system claimed in claim 49 is not surprising since these features are totally absent from Petsko, Tsuda, or their combination. Specifically, there is absolutely no mention or suggestion in Petsko, Tsuda, or their combination of "means for transforming the overhead bit stream into a series of bursts which fit into respective ones of the gaps of the gapped bit stream[, where the transforming includes] mapping each overhead bit into a wrapper symbol [based] on the logical value of the overhead bit".

¹ For the Examiner to establish a *prima facie* case of obviousness, three criteria must be considered: (1) there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine the reference teachings, (2) there must be a reasonable expectation of success, and (3) the prior art references must teach or suggest all of the claim limitations. MPEP §§ 706.02(j), 2142 (8th ed.).

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It is thus respectfully submitted that at least one feature of claim 49 is neither taught nor suggested by the cited art. Therefore, the Applicant respectfully submits that at least one criterion required for establishing a *prima facie* case of obviousness in accordance with MPEP 706.02(j) is not satisfied. The Examiner is thus respectfully requested to withdraw his rejection of claim 49 and it is respectfully submitted that claim 49 is in condition for allowance.

Dependent claims 50-52

Claims 50-52 depend either directly or indirectly on claim 49 and therefore include all of the features of claim 49. Hence, for the same reasons as those set forth herein above in respect of claim 49, the Applicant respectfully submits that claims 50-52 are in allowable condition and, thus, the Examiner is respectfully requested to withdraw his rejection of claims 50-52.

Independent claim 54

The Examiner's attention is directed to the following excerpt of claim 54, portions of which have been highlighted:

54. A wrapper symbol coder for mapping each of a plurality of overhead bits into a wrapper symbol, the coder being operable to produce either a first signal level transition pattern or a second signal level transition pattern depending on the logical value of each overhead bit, wherein the first and second signal level transition patterns are each characterized by having a distinct average signal level and are each further characterized by at least one signal level transition.

It is respectfully submitted that Petsko and Tsuda, whether taken separately or in combination, do not teach or suggest the above features of claim 54.

To begin with, it is respectfully submitted that the Examiner, in his rejection of claim 54 on page 4 of the Office Action, has not addressed *any* of the features of the wrapper symbol coder claimed in claim 54.

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In particular, the Examiner has not indicated why and how he believes that Petsko, Tsuda, or their combination, teaches or suggests the claimed coder for "mapping each of a plurality of overhead bits into a wrapper symbol", wherein the coder is "operable to produce either a first signal level transition pattern or a second signal level transition pattern depending on the logical value of each overhead bit".

If for any reason the Examiner continues to maintain an argument of unpatentability, then he is kindly and respectfully urged to identify which features of Petsko, Tsuda, or their combination, he considers as corresponding to the claimed coder for "mapping each of a plurality of overhead bits into a wrapper symbol" based on "the logical value of each overhead bit". The Examiner is also respectfully requested to note that an argument which fails to identify the claimed coder for "mapping each of a plurality of overhead bits into a wrapper symbol" based on "the logical value of each overhead bit", cannot support a finding of obviousness, as the third criterion required for establishing a *prima facie* case of obviousness in accordance with MPEP 706.02(j) will not be satisfied.

Moreover, the fact that the Examiner has not addressed any of the features of the wrapper symbol claimed in claim 54 is not surprising since these features are totally absent from Petsko, Tsuda, or their combination. Specifically, there is absolutely no mention or suggestion in Petsko, Tsuda, or their combination of a coder for "mapping each of a plurality of overhead bits into a wrapper symbol" based on "the logical value of each overhead bit".

It is thus respectfully submitted that at least one feature of claim 54 is neither taught nor suggested by the cited art. Therefore, the Applicant respectfully submits that at least one criterion required for establishing a *prima facie* case of obviousness in accordance with MPEP 706.02(j) is not satisfied. The Examiner is thus respectfully requested to withdraw his rejection of claim 54 and it is respectfully submitted that claim 54 is in condition for allowance.

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3) Rejection of claims 32-38 under 35 USC 103

On page 5 of the Office Action, the Examiner has rejected claims 32-38 under 35 USC 103(a) as being unpatentable over Petsko et al. U.S. Patent No. 6,292,516 (hereinafter referred to as "Petsko") and Tsuda U.S. Patent No. 5,619,507 (hereinafter referred to as "Tsuda") in view of Nakamura et al. U.S. Patent No. 5,857,092 (hereinafter referred to as "Nakamura").

Independent claim 32

The Examiner's attention is directed to the following excerpt of claim 32, portions of which have been highlighted:

32. A system [...] comprising:
a receiver for converting the composite optical signal into an electrical signal having an electrical bandwidth that is substantially less than the bandwidth of the high-speed data stream;
a wrapper segment identifier connected to the receiver, for locating the position of each wrapper segment in the low-bandwidth electrical signal; and
a detector connected to the wrapper segment identifier, for detecting individual bits of the overhead bit stream from the average level of the low-bandwidth electrical signal during the located wrapper segments.

It is respectfully submitted that Petsko, Tsuda, and Nakamura, whether taken separately or in combination, do not teach or suggest the above features of claim 32.

Firstly, as conceded by the Examiner on page 6 of the Office Action, Petsko does not teach or suggest the above-highlighted features of claim 32.

Secondly, the Applicant respectfully submits that Tsuda also fails to teach or suggest the above-highlighted features of claim 32. In particular, Tsuda totally lacks any

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mention or suggestion of "converting [an] composite optical signal into an electrical signal", let alone into "an electrical signal having an electrical bandwidth that is substantially less than the bandwidth of the high-speed data stream". It is thus not surprising that the other above-highlighted features of claim 32 are also totally absent from Tsuda.

Thirdly, it is respectfully submitted that Nakamura also fails to teach or suggest the above-highlighted features of claim 32. Specifically, Nakamura relates to an interface apparatus for interconnecting apparatus of two different systems, namely, an apparatus of the SDH system and an apparatus of the SONET system. The interface apparatus of Nakamura includes a "light/electricity converting unit 141 [that] converts [an] STM-n signal (or STS-m signal) inputted through a transmission line (mainly an optical fiber) into an electrical signal" (col. 20, line 66 to col. 21, line 2). However, Nakamura does not further characterize the conversion performed by the "light/electricity converting unit". In particular, Nakamura totally lacks any teaching or suggestion that the "light/electricity converting unit" converts the optical signal into "an electrical signal having an electrical bandwidth that is substantially less than the bandwidth of the high-speed data stream". In fact, the Examiner only refers to Figure 8 and reference block #153 in Nakamura, which have absolutely nothing to do with an electrical signal having an electrical bandwidth that is substantially less than the bandwidth of the high-speed data stream. Hence, it is Applicant's respectful submission that the above-emphasized feature of claim 32, which is absent from Petsko and Tsuda, is also completely lacking in Nakamura.

Furthermore, since Nakamura does not teach or suggest conversion of an optical signal into a low-bandwidth electrical signal, it follows that Nakamura cannot possibly teach or suggest "locating the position of each wrapper segment in the low-bandwidth electrical signal" and "detecting individual bits of the overhead bit stream from the average level of the low-bandwidth electrical signal during the located wrapper segments". Again, the Examiner only refers to Figure 8 and reference block #153 in Nakamura which have absolutely nothing to do with these features.

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(Moreover, the Examiner has not referred to any of the cited references in an attempt to show that these two features of claim 32 have been taught or suggested.)

For the above reasons, it is respectfully submitted that at least one feature of claim 32 is neither taught nor suggested by the cited art, whether taken separately or in combination. As such, the Applicant respectfully submits that at least one criterion required for establishing a *prima facie* case of obviousness in accordance with MPEP 706.02(j) is not satisfied. Accordingly, it is respectfully submitted that claim 32 is in allowable condition, and, thus, the Examiner is respectfully requested to withdraw his rejection of claim 32.

Dependent claims 33-35

Claims 33-35 depend either directly or indirectly on claim 32 and therefore include all of the features of claim 32. Hence, for the same reasons as those set forth herein above in respect of claim 32, the Applicant respectfully submits that claims 33-35 are in allowable condition. The Examiner is thus respectfully requested to withdraw his rejection of claims 33-35.

Independent claim 36

The Examiner's attention is directed to the following excerpt of claim 36, portions of which have been highlighted:

36. A system [...] comprising:
means for converting the composite optical signal into an electrical signal having an electrical bandwidth that is substantially less than the bandwidth of the high-speed data stream;
means for locating the position of each wrapper segment in the low-bandwidth electrical signal; and
means for detecting individual bits of the overhead bit stream from the average level of the low-bandwidth electrical signal during the located wrapper segments.

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It is respectfully submitted that the text of claim 36 parallels the text of claim 32.

Accordingly, for the same reasons as those set forth above in respect of claim 32, it is respectfully submitted that at least one feature of claim 36 is neither taught nor suggested by the cited art, whether taken separately or in combination. As such, the Applicant respectfully submits that at least one criterion required for establishing a *prima facie* case of obviousness in accordance with MPEP 706.02(j) is not satisfied. Accordingly, it is respectfully submitted that claim 36 is in allowable condition, and, thus, the Examiner is respectfully requested to withdraw his rejection of claim 36.

Dependent claim 37

Claim 37 depends directly on claim 36 and therefore includes all of the features of claim 36. Hence, for the same reasons as those set forth herein above in respect of claim 36, the Applicant respectfully submits that claim 37 is in allowable condition. The Examiner is thus respectfully requested to withdraw his rejection of claim 37.

Independent claim 38

The Examiner's attention is directed to the following excerpt of claim 38, portions of which have been highlighted

38. A system [...] comprising:
- an optical tap coupler for **coupling a fraction of the optical power of the WDM signal;**
 - a front end connected to the coupler, for **separating the WDM signal into the plurality of single-carrier optical signals;**
 - a plurality of receivers connected to the front end, for **converting each single-carrier optical signal into a respective electrical signal having a bandwidth that is substantially less than the bandwidth of the corresponding high-speed data stream;**
 - a plurality of wrapper segment identifiers connected to the plurality of receivers, for **locating the position of wrapper segments in each low-bandwidth electrical signal; and**

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a plurality of detectors connected to the plurality of wrapper segment identifiers, for detecting individual bits of the overhead bit streams from the average level of the corresponding low-bandwidth electrical signal during the located wrapper segments.

It is respectfully submitted that claim 38 recites features similar to those recited in claim 32.

Accordingly, for the same reasons as those set forth above in respect of claim 32, it is respectfully submitted that at least one feature of claim 38 is neither taught nor suggested by the cited art, whether taken separately or in combination. As such, the Applicant respectfully submits that at least one criterion required for establishing a *prima facie* case of obviousness in accordance with MPEP 706.02(j) is not satisfied. Accordingly, it is respectfully submitted that claim 38 is in allowable condition and, thus, the Examiner is respectfully requested to withdraw his rejection of claim 38.

In addition, in his rejection of claim 38 on page 5 of the Office Action, the Examiner also failed to address the features of the system claimed in claim 38 that enable extraction of a plurality of overhead bit streams from a respective plurality of single-carrier optical signals forming part of a WDM optical signal. In particular, the Examiner failed to indicate how he believes the cited references teach or suggest the claimed:

- (1) "optical tap coupler";
- (2) "front end connected to the coupler";
- (3) "plurality of receivers connected to the front end";
- (4) "plurality of wrapper segment identifiers connected to the plurality of receivers";
and
- (5) "plurality of detectors connected to the plurality of wrapper segment identifiers".

It is respectfully submitted that these features are nowhere taught or suggested in the cited references.

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Therefore, for the above additional reasons, it is once again respectfully submitted that at least one feature of claim 38 is neither taught nor suggested by the cited art, whether taken separately or in combination. As such, the Applicant respectfully submits that at least one criterion required for establishing a *prima facie* case of obviousness in accordance with MPEP 706.02(j) is not satisfied. Accordingly, it is once again respectfully submitted that claim 38 is in allowable condition and, thus, the Examiner is once again respectfully requested to withdraw his rejection of claim 38.

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4) Rejection of claims 53 under 35 USC 103

On page 7 of the Office Action, the Examiner has rejected claim 53 under 35 USC 103(a) as being unpatentable over Petsko et al. U.S. Patent No. 6,292,516 (hereinafter referred to as "Petsko") and Tsuda U.S. Patent No. 5,619,507 (hereinafter referred to as "Tsuda") in view of Kolze et al. U.S. Patent No. 6,285,681 (hereinafter referred to as "Kolze").

As set forth below, the Applicant respectfully traverses the rejection and submits that claim 53 is in condition for allowance.

Dependent claim 53

Claim 53 depends directly on claim 49 and therefore includes all of the features of claim 49.

Now, as mentioned above in respect of claim 49, Petsko and Tsuda do not teach or suggest "mapping each overhead bit into a wrapper symbol which is represented by either a first signal level transition pattern or a second signal level transition pattern depending on the logical value of the overhead bit". Furthermore, it is respectfully submitted that Kolze also does not teach or suggest these features of claim 49. Rather, Kolze describes an apparatus for communicating data packets in variable length bursts over a physical layer in a multilayer data communication scheme, where each burst contains information data and overhead that includes forward error control data.

Therefore, it is respectfully submitted that at least one feature of claim 49, and thus of claim 53, is neither taught nor suggested by the cited art whether taken severally or in combination. As such, the Applicant respectfully submits that at least one criterion required for establishing a *prima facie* case of obviousness in accordance

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with MPEP 706.02(j) is not satisfied. Accordingly, the Examiner is respectfully requested to withdraw his rejection of claim 53.

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III. CONCLUSION

The Applicant gratefully acknowledges the allowance of claims 44-48 and is of the view that claims 1-43 and 49-54 are in allowable condition. Favorable reconsideration is requested. Early allowance of the application is earnestly solicited.

If the claims of the application are not considered to be in full condition for allowance, for any reason, the Applicant respectfully requests the constructive assistance and suggestions of the Examiner in drafting one or more acceptable claims pursuant to MPEP 707.07(j) or in making constructive suggestions pursuant to MPEP 706.03 so that the application can be placed in allowable condition as soon as possible and without the need for further proceedings.

Respectfully submitted,



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